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ABSTRACT

A Coriolis flowmeter is operable as a vibrating tube densitometer where a flowtube is driven to vibrate at a fundamental frequency from which density of the material flowing through the flowtube may be calculated. The drive gain is monitored as an indicator of multiphase flow including gas and liquid components where a substantial increase in drive gain indicates gas damping of the flowtube vibrations due to a transient bubble entering the flowtube. The gas damping effects of the transient bubble and the correspondingly reduced density readings are remediated by the use of historical density measurements corresponding to periods of flow when no transient bubble has entered the flowtube.